

Amendments to the Drawings:

The attached sheets of drawings include Figures 4 and 5. These figures were added in response to Examiner's objections under 37 CFR 1.83(a). No new matter has been added. These sheets, which include Figures 1-5, replace the original sheet including Figs 1-3.

Attachment: Replacement Sheet

Remarks

Examiner objected to the drawings under 37 CFR 1.83(a). Examiner rejected claims 33 and 38 under 35 U.S.C. 101. Examiner rejected claims 5, 17, 20, 28, 42, and 43 under 35 U.S.C. 112, first paragraph. Examiner rejected claims 3, 5, 7-10, 14, 16-17, 22, 25-26, 28, 30-40, and 42 under 35 U.S.C. 112, second paragraph. Examiner rejected claims 1-11, 13-16, and 18-42 under 35 U.S.C. 102(e) as being anticipated by U.S. Pat. No. 6,391,020 (Kurtz). Examiner rejected claims 12, 17, and 43 under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,605,453 (Ozkan) in combination with Kurtz.

Although Applicant's attorney disagrees with Examiner's rejection of claims 3, 9-10, 16-17, 22, 25-26, 30-35, 37-39, and 41-43, Applicant's attorney has cancelled claims 3, 9-10, 16-17, 22, 25-26, 30-35, 37-39, and 41-43. Applicant reserves the right to file one or more continuations to claim the cancelled material.

Applicant's attorney has amended claims 7 and 8.

Examiner objected to the drawings under 37 CFR 1.83(a). By this Amendment, Applicant's attorney submits that the drawings comply with 37 CFR 1.83(a). No new matter has been added. Figures 4 and 5 depict certain features of the invention in block diagram flow chart form. Referring to Figure 4, blocks 100, 102, and 104 correspond to claim 11. Blocks 100, 102, 104, and 106 correspond to claim 12. Blocks 100, 102, 104, and 108 correspond to claim 13. Blocks 100, 102, and 110 correspond to claim 15. Blocks 100, 102, and 114 correspond to claim 19. Referring to Figure 5, blocks 116 and 118 correspond to claim 14.

Examiner rejected claims 5, 17, 20, 28, 42, and 43 under 35 U.S.C. 112, first paragraph. Claims 5 and 28 comply with 35 U.S.C. 112, first paragraph, e.g., P. 6, L. 21-22: "However, the radiation force on the microbubble can be significant since it is an ideal acoustic reflector. Radiation forces at reasonable ultrasonic intensities can easily reach the nNewton-to- μ Newton level at the microbubble surface." Claim 20 complies with 35 U.S.C. 112, first paragraph, e.g., P. 9, L. 5-8: "The shock wave associated with microbubble creation (*i.e.*, an

acoustic shock wave is launched simultaneous with microbubble creation during a photodisruption event) can be used as a high frequency, high precision acoustic source.”

Examiner rejected claims 3, 5, 7-10, 14, 16-17, 22, 25-26, 28, 30-40, and 42 under 35 U.S.C. 112, second paragraph. Although Examiner listed claim 40 as rejected under 35 U.S.C. 112, second paragraph, Examiner did not include claim 40 in the claim by claim analysis of pages 4 and 5 of the Office Action. Applicant’s attorney thus assumes that claim 40 complies with 35 U.S.C. 112, second paragraph and that Examiner listed claim 40 as rejected in error.

Claims 5 and 28 comply with 35 U.S.C. 112, second paragraph. The phrase “substantially continuous force” carries its ordinary meaning. The term “continuous” also carries its ordinary meaning, e.g., uninterrupted in time.

Amended claims 7 and 8 comply with 35 U.S.C. 112, second paragraph.

Claims 14 and 36 comply with 35 U.S.C. 112, second paragraph. Nanobubbles are a subset of microbubbles.

Examiner rejected claims 1-11, 13-16, and 18-42 under 35 U.S.C. 102(e) as being anticipated by U.S. Pat. No. 6,391,020 (Kurtz).

Independent claims 1 and 21 include the limitation “without destroying the microbubble.” Kurtz, however, destroys the microbubble: “Cavitation and mechanical disruption in the vicinity of the nuclei then occur.” (Col. 4, ll. 6-7). For at least this reason, Kurtz does not anticipate claims 1 and 21.

Claims 2, 4-8, 11, 13-15, and 18-20 depend from claim 1. Claims 23-24, 27-29, 36, and 40 depend from claim 21. For at least the reasons Kurtz does not anticipate claims 1 and 21, Kurtz does not anticipate claims 2, 4-8, 11, 13-15, 18-20, 23-24, 27-29, 36, and 40.

Claims 2, 4-8, 11, 13-15, 18-20, 23-24, 27-29, 36, and 40 provide additional limitations over their respective independent claims providing further reasons claims 2, 4-8, 11, 13-15, 18-20, 23-24, 27-29, 36, and 40 are not anticipated by Kurtz.

Examiner rejected claims 12, 17, and 43 under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,605,453 (Ozkan) in combination with Kurtz.

Claim 12 depends from claim 1. Claim 1 includes the limitation “without destroying the microbubble.” Kurtz fails to disclose, at least, the element “without destroying the microbubble” because Kurtz destroys the microbubble: “Cavitation and mechanical disruption in the vicinity of the nuclei then occur.” (Col. 4, ll. 6-7). Examiner fails to establish a *prima facie* case of obviousness for claim 12.

It would not have been obvious for one of skill in the art to combine the teachings of Kurtz and Ozkan to achieve Applicant’s invention. Kurtz teaches away from Applicant’s invention because, contrary to the claim language, Kurtz destroys the microbubble, (Col. 4, ll. 6-7). Ozkan teaches away from Applicant’s invention because Ozkan uses electrostatic patterning via a patterned electrode: “a patterned electrode having an opposite, second, polarity under force of an applied electric field.” (Abstract). Applicant’s invention, in contrast, uses acoustic radiative forces: “[t]he microbubble can be manipulated with either continuous-wave or pulsed ultrasound sources . . . the radiation force on the microbubble can be significant since it is an ideal acoustic reflector.” (Col. 6, ll. 16-21). Ozkan and Applicant’s invention use fundamentally different phenomena.

Applicant’s attorney respectfully submits that the application is in condition for allowance. Applicant’s attorney requests a notice to that effect. Applicant’s attorney also invites a telephone conference if the Examiner believes it will advance the prosecution of this application.


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Please charge any additional fees or credit any overpayment as a result of the filing of this paper to our Deposit Account No. 02-3978. A duplicate of this paper is enclosed for that purpose.

Respectfully submitted,

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